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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/542,460	04/04/2000	Tatsuro Yamazaki	862.C1883	6080

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

LAO, LUN YI

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/542,460

Applicant(s)

YAMAZAKI ET AL.

Examiner

LUN-YI LAO

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,12,14,16,18,20,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 12, 14, 16, 18, 20 and 22-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/22/2007 and 11/12/2004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 3-4, 12, 14, 16, 18, 20 and 22-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of "time intervals less than 5 μ s" has not been disclosed in the specification. The specification only disclose normalized luminance points having uniform time intervals as short as 5 μ s(see page 36, lines 7-19).

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the equal time intervals to 5 μ s are plotted on the graph, wherein the plurality of driving time periods do not include $x=0$ and $x=1$, normalized luminance not falling within a range defined by lines $Y=X$ and $Y=X^{0.8}$ on the graph as cited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

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Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bassetti, Jr. et al(5,185,602) in view of Boudreau et al(4,839,563) and Hosokawa et al(5,216,331).

As to claims 1, and 12, Bassetti Jr. et al teach an electron-emitting device(LED or EL display) comprising frame rate conversion means(33) for converting a frame rate of an input image signal(30HZ) to a higher frame rate output image data (60HZ)(see figures 1, 9, 10; column 1, lines 46-62; column 2, lines 33-66; column 9, lines 40-68 and column 10, lines 1-6). Bassetti, Jr. teaches x is a normalized driving time period normalized to a maximum time period(pulse width)(see figures 4A and 8), during which time the fluorescent substances(LED display) are continuously irradiated with electrons emitted from the electron-emitting devices driven by the image signal output from the circuit, y is a normalized luminance normalized to an amount of light emitted by the fluorescent substances, resulting from irradiation by electrons emitted from the electron-emitting devices in the maximum time period(see figures 2A-2C, 3A, 4A, 8-10; column 4, lines 3-68; column 15, lines 1-17; column 8, lines 39-62 and column 17, lines 48-63). Bassetti, Jr. et al teach a plurality of memories(20, 26, 94) for storing part of image signal of one lie of the image and a controller for controlling reading the image signal from the plurality of memoires(20, 26, 94)(see figures 1, 9; column 7, lines 12-38 a

Bassetti et al fail to disclose normalized luminance not falling within a range defined by lines $Y=X$ and $Y=X^{0.8}$ on the graph, wherein the range includes a border, are 4/15 or less of the plurality of normalized luminance.

Boudreau et al teach a graph whose abscissa x and ordinate y , a plurality of normalized luminance which are measured at a plurality of driving time periods, each of which has equal time intervals to $5 \mu s$ are plotted on the graph, wherein the plurality of driving time periods do not include $x=0$ and $x=1$, normalized luminance not falling within a range defined by lines $Y=X$ and $Y=X^{0.8}$ on the graph(see figure 4 and column 5, lines 35-43). It would have been obvious to have modified Bassetti et al with the teaching of Boudreau et al, so as to increase light output and to form a desired image on a display(see abstract and column 3, lines 35-40).

Hosokawa et al teach a border(e.g. $X=0$ or $X=1$) are $4/15$ or less of the plurality of normalized luminance(see figure 12 and column 13, lines 16-30). It would have been obvious to have modified Bassetti et al as modified with the teaching of Hosokawa et al, since the fluorescent needs time to build up the energy to emit electrons.

As to claims 12, Bassetti, Jr. et al teach the electron-emitting device(LED or EL display)(see column 2, lines 34-40).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bassetti, Jr. et al in view of Boudreau et al(4,839,563), Hosokawa et al(5,216,331) and Okuno et al(6,288,745).

Bassetti, Jr. as modified fail to disclose a display system for converting an interlaced scanning into a non-interlaced scanning.

Okuno et al teach a display system for converting an interlaced format into a non-interlaced format(see column 1, lines 4-12 and column 2, lines 56-58). It would have

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been obvious to have modified Bassetti, Jr. et al as modified with the teaching of Okuno et al, so an interlaced display data could be presented on non-interlaced display.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bassetti, Jr. et al in view of Boudreau et al(4,839,563), Hosokawa et al(5,216,331) and Fujii(6,008,588).

Bassetti, Jr. et al as modified fail to disclose a pulse width modulation signal.

Fujii teaches an EL display comprising means for performing pulse width modulation by a signal of frame rate is changed(see figures 2-7, 10; column 15, lines 13-68 and column 16, lines 1-34). It would have been obvious to have modified Bassetti, Jr. et al as modified with the teaching of Fujii, so provide a gray scale display to a user.

8. Claims 14, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bassetti, Jr. et al in view of Boudreau et al(4,839,563), Hosokawa et al(5,216,331) and Suzuki et al(5,155,416).

Bassetti, Jr. et al as modified fail to disclose a voltage applied to electron for accelerating electrons is higher than 500V.

Suzuki et al teach an electron-emitting display device for applying 10KV to an electrode(14)(see figures 1, 4 and column 5, lines 31-50). It would have been obvious to have modified Bassetti, Jr. et al as modified with the teaching of Suzuki et al, since Bassetti, Jr. et al and Suzuki et al both teach an electron-emitting display and so as to attract electrons emitting by field effect elements.

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9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bassetti, Jr. et al in view of Boudreau et al(4,839,563), Hosokawa et al(5,216,331) and Yoshioka et al(5,872,541).

Bassetti, Jr. et al as modified fail to point out a plurality of electron emitting devices and the fluorescent substances are arranged apart from each other.

Yoshioka et al teach an image forming apparatus(electron-emitting apparatus) comprising a plurality of emitting devices(ED) and fluorescent substances are arranged apart from each other(see figures 39A-39C; column 21, lines 2-23 and column 32, lines 36-65). It would have been obvious to have modified Bassetti, Jr. as modified with the teaching of Yoshioka et al, so as to exhibit more excellent characteristics than other conventional image display apparatus.

10. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bassetti, Jr. et al in view of Boudreau et al(4,839,563), Hosokawa et al(5,216,331) and Kishino et al(5,754,148).

Bassetti, Jr. et al as modified fail to disclose first, second and third memories for storing first, second and third color signals respectively and shift registers connected to the memories.

Kishino et al teach first, second and third memories(54-1, 54-2, 54-3 or 55-1, 55-2, 55-3) for storing first(R), second(G) and third color(B) signals respectively and shift registers(61, each has a plurality of registers) connected to the memories(54-1, 54-2, 54-3 or 55-1, 55-2, 55-3)(see figures 10, 15 and column 11, lines 32-59). It would have been obvious to have modified Bassetti, Jr. as modified with the teaching of Kishino et

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al, so the input image signals could temporally stored in a memory and send out as they need to.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 3-4, 12, 14, 16, 18, 20 and 22-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Harrison et al(6,002,206) teach an organic electroluminescent device having a graph of light output against time.

Pham et al(5,300,960) teach teach an LED display having a graph of light output against time.

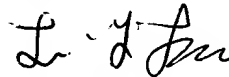
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 11, 2007

A handwritten signature in black ink, appearing to read 'Lun-yi Lao', is written over a horizontal line.

Lun-yi Lao

Primary Examiner